

REMARKS

Claims 1 to 16, 18 to 45, 47 to 58, 67 to 76, 80 to 86, 90 to 94, 96, and 97 have been canceled without prejudice or disclaimer. Claims 17, 46, 63, 87, and 95 are amended. Claims 17, 46, 59 to 66, 77 to 79, 87 to 89, and 95 are pending and under consideration.

The amendment to claim 17 merely adds the language “the group consisting of” and adds no new matter. The amendment to claim 46 merely adds the language “...sequence selected from the group consisting...” and adds no new matter. The amendment to claim 63 merely corrects a typographical error and adds no new matter. Support for the amendment to claim 87 is found in the specification, e.g., at original claim 90 and at the second original claim 91 (the original application was filed with two claims numbered 91). The amendment to claim 95 merely changes the language “nucleotide sequence nucleic acid of” to the language “nucleic acid sequence of” and adds no new matter. Thus the amendments are fully supported by the specification and add no new matter.

Claim Objections

The Examiner objects to the language “...one subunit is a *P. furiosus* protein selected from...” in claim 17. See Action at page 2, item 1. The Examiner suggests adding the language “...the group consisting of...” to the claim. See *id.* Solely to expedite prosecution and without acquiescing to the objection, applicants have amended claim 17 to include the language “...one subunit is a *P. furiosus* protein

selected from the group consisting of....” That amendment should obviate the Examiner’s objection.

The Examiner objects to the language “...amino acid sequence consisting of at least one of...” in claim 46. See Action at page 2, item 2. The Examiner suggests adding the language “...at least one sequence selected from the group consisting of...” to the claim. See *id.* Solely to expedite prosecution and without acquiescing to the objection, applicants have amended claim 46 to include the language “...a protein having an amino acid sequence consisting of at least one sequence selected from the group consisting of” That amendment should obviate the Examiner’s objection.

The Examiner objects to the term “sequence” in claim 63. See Action at page 3, item 3. Applicants have amended claim 63 to replace the term “sequence” with the term “sequence”, as suggested by the Examiner. That amendment should obviate the Examiner’s objection.

The Examiner objects to the language “A protein extract of claim...” in claims 90, 91, and 97. See Action at page 3, item 4. Solely to expedite prosecution, applicants canceled claims 90, 91, and 97 without prejudice or disclaimer. Thus the Examiner’s objections to those claims are moot.

35 U.S.C. § 112, second paragraph, rejection of claim 85

The Examiner rejects claim 85 under 35 U.S.C. § 112, second paragraph, as allegedly failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. See Action at page 3, items 6 and 7. Solely to expedite prosecution, and without acquiescing to the Examiner's rejections, applicants canceled claim 85 without prejudice or disclaimer. Applicants reserve the right to pursue the subject matter of that claim in a related application. Because claim 85 is canceled, the 35 U.S.C. § 112, second paragraph, rejection is moot.

35 U.S.C. § 112, first paragraph, rejections (written description)

The Examiner rejects claim 85 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. See Action at page 4, item 9. Solely to expedite prosecution, and without acquiescing to the Examiner's rejections, applicants canceled claim 85 without prejudice or disclaimer. Applicants reserve the right to pursue the subject matter of that claim in a related application. Because claim 85 is canceled, the 35 U.S.C. § 112, first paragraph, rejection is moot.

The Examiner rejects claims 85, 87 to 91, and 97 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. See Action at pages 4 to 5, item 10.

First, solely to expedite prosecution, and without acquiescing to the Examiner's rejections, applicants canceled claims 85, 90, 91, and 97 without prejudice or

disclaimer. Applicants reserve the right to pursue the subject matter of those claims in a related application. Because claims 85, 90, 91, and 97 are canceled, the 35 U.S.C. § 112, first paragraph, rejection is moot with respect to those claims.

Second, with respect to claims 87 to 89, the Examiner first acknowledges that "...the specification discloses the determination of dUTPase activity in a *T. thermophilis* cell extract and the detection in a Western blot of a protein in that cell extract using an antibody against the *P. furiosus* protein P45 of SEQ ID NO: 71...." See Action at page 6, item 14. The Examiner then alleges that "...the specification fails to disclose the structural characteristics required in any *T. thermophilis* dUTPase such that a composition comprising said dUTPase would have PCR enhancing characteristics, or the structural elements in the polypeptide of SEQ ID NO: 71 which are associated with dUTPase activity and PCR enhancing activity." See *id.* Finally, the Examiner suggests that adding language from claims 90 and 97 to claim 87 may obviate the 35 U.S.C. § 112, first paragraph, rejection. See Action at page 7, item 15.

Solely to expedite prosecution and without acquiescing to the Examiner's rejection, applicants have amended claim 87 to include the language "...wherein the at least one protein of the purified proteins from *Thermus thermophilis* which possesses dUTPase activity can be bound by an antibody specific for a recombinant *P. furiosus* protein consisting of the amino acid sequence of SEQ ID NO: 71; and wherein the at least one protein of the purified proteins from *Thermus thermophilis* which possesses dUTPase activity possesses a molecular weight of approximately 24kD in an SDS-PAGE gel." Applicants assert that amended claim 87 recites sufficient structural

features to demonstrate that applicants possessed the claimed invention at the time the application was filed.

Claims 88 and 89 depend from claim 87. Because amended claim 87 satisfies the written description requirement, applicants assert that dependant claims 88 and 89 also satisfy the written description requirement.

Applicants request reconsideration and withdrawal of the 35 U.S.C. § 112, first paragraph, (written description) rejection of claims 87 to 89.

35 U.S.C. § 112, first paragraph rejection of claims 85, 87-91, and 97
(enablement)

The Examiner rejects claim 85 under 35 U.S.C. § 112, first paragraph, as allegedly not being enabled. See Action at pages 7 to 9, items 16 to 18. Solely to expedite prosecution, and without acquiescing to the Examiner's rejections, applicants canceled claim 85 without prejudice or disclaimer. Applicants reserve the right to pursue the subject matter of that claim in a related application. Because claim 85 is canceled, the 35 U.S.C. § 112, first paragraph, rejection is moot with respect to that claim.

The Examiner rejects claims 87 to 91 and 97 under 35 U.S.C. § 112, first paragraph, as allegedly not being enabled. See Action at pages 7 and 9 to 11, items 16, 19, and 20. Specifically, the Examiner alleges that that "...the specification is silent in regard to (a) the structural elements required in any T. thermophilis dUTPase such that it has PCR enhancing activity, (2) the structural elements in the polypeptide of SEQ

ID NO:71 which are associated with dUTPase activity and PCR enhancing activity, and (3) the function/structure of any *T. thermophilis* polypeptide which is 24 KDa.” See Action at page 10, item 20. The Examiner then acknowledges that “...the specification teaches a protein extract comprising *T. thermophilis* proteins wherein at least one of the proteins has dUTPase activity, wherein said protein having dUTPase activity has a molecular weight of 24 KDa and can be detected by an antibody specific for the polypeptide of SEQ ID NO: 71.” See id.

First, solely to expedite prosecution, and without acquiescing to the Examiner’s rejections, applicants canceled claims 90, 91, and 97 without prejudice or disclaimer. Applicants reserve the right to pursue the subject matter of those claims in a related application. Because claims 90, 91, and 97 are canceled, the 35 U.S.C. § 112, first paragraph, rejection is moot with respect to those claims.

Second, with regard to claim 87, applicants have amended that claim to include the language “...wherein the at least one protein of the purified proteins from *Thermus thermophilis* which possesses dUTPase activity can be bound by an antibody specific for a recombinant *P. furiosus* protein consisting of the amino acid sequence of SEQ ID NO: 71; and wherein the at least one protein of the purified proteins from *Thermus thermophilis* which possesses dUTPase activity possesses a molecular weight of approximately 24kD in an SDS-PAGE gel.” As discussed above, the Examiner acknowledges that “...the specification teaches a protein extract comprising *T. thermophilis* proteins wherein at least one of the proteins has dUTPase activity, wherein said protein having dUTPase activity has a molecular weight of 24 KDa and can be

detected by an antibody specific for the polypeptide of SEQ ID NO: 71.” Thus, applicants assert that amended claim 87 is enabled.

Claims 88 and 89 depend from claim 87. Because amended claim 87 is enabled for the reasons described above, applicants assert that dependant claims 88 and 89 also are enabled.

Applicants request reconsideration and withdrawal of the 35 U.S.C. § 112, first paragraph, (enablement) rejection of claims 87 to 89.

Double Patenting

The Examiner rejects claims 17, 46, 59 to 66, 77 to 79, 85, 87 to 91, 95, and 97 under the judicially created doctrine of double patenting over certain claims of U.S. Patent No. 6,183,997. See Action at page 11, item 22.

As applicants have previously noted, without acquiescing to the rejection, if the claims are otherwise found in condition for allowance, applicants will file a terminal disclaimer.

Conclusion

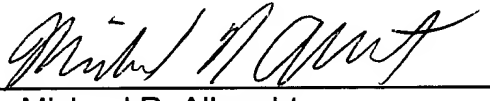
If the Examiner does not consider the application to be in condition for allowance (but for the filing of a terminal disclaimer), applicants request that she call the undersigned at (650) 849-6658 to set up an interview.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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